CLAIMS:

1. A membrane binding diastereomeric peptide comprising from about 7 to 50 amino acid residues corresponding to an amino acid sequence of a fragment of a transmembrane protein, wherein at least two amino acid residues of the diastereomeric peptide are in the D-isomer configuration, said diastereomeric peptide capable of binding the transmembrane protein thereby inhibiting functional assembly of said transmembrane protein, and active fragments, derivatives, analogs or salts thereof.

2. The diastereomeric peptide according to claim 1 comprising from 10 to 40 amino acid residues.

3. The diastereomeric peptide according to claim 1, wherein the membrane protein is selected from the group consisting of viral proteins, bacterial proteins, ion channels, receptors, transporters, and pumps.

4. The diastereomeric peptide according to claim 3, wherein the viral protein is a viral envelope surface glycoprotein.

5. The diastereomeric peptide according to claim 4, wherein the viral envelope surface glycoprotein is selected from the group consisting of envelope surface glycoproteins of HIV, human T-lymphocyte virus, human respiratory syncytial virus, human parainfluenza virus, influenza virus, measles virus, Epstein-Barr virus, bovine leucosis virus, feline sarcoma virus, feline leukemia virus, simian sarcoma virus, simian leukemia virus, simian immunodeficiency virus, canine distemper virus, Newcastle disease virus, simian Mason-Pfizer virus, and sheep progressive pneumonia virus.

6. The diastereomeric peptide according to claim 5, wherein the viral envelope surface glycoprotein is HIV-1_{LAVI} gp41.

7. The diastereomeric peptide according to claim 6 comprising the amino acid sequence of DP178 set forth in SEQ ID NO:1.

8. The diastereomeric peptide according to claim 7 selected from the group consisting of SEQ ID NO:2 and SEQ ID NO: 3.

9. The diastereomeric peptide according to claim 7, further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

10. The diastereomeric peptide according to claim 6 comprising the amino acid sequence set forth in SEQ ID NO:4 corresponding to HIV-1_{LAVI} gp41 amino terminal fusion peptide.

11. The diastereomeric peptide according to claim 10 selected from the group consisting of SEQ ID NO:5 to SEQ ID NO:7.

12. The diastereomeric peptide according to claim 10, further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

13. The diastereomeric peptide according to claim 1, wherein the membrane protein is Glycophorin A.

14. The diastereomeric peptide according to claim 13 comprising the amino acid sequence set forth in SEQ ID NO: 8.

15. The diastereomeric peptide according to claim 14, further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

16. The diastereomeric peptide according to claim 15 selected from the group consisting of SEQ ID NO:9 and SEQ ID NO:10.

17. The diastereomeric peptide according to any one of claims 14 to 16 selected from the group consisting of SEQ ID NO:11 to SEQ ID NO:19.

18. The diastereomeric peptide according to claim 3, wherein the bacterial protein is aspartate Tar receptor.

19. The diastereomeric peptide according to claim 18 comprising the amino acid sequence set forth in SEQ ID NO:20 corresponding to the transmembrane-1 domain of the aspartate Tar receptor.

20. The diastereomeric peptide according to claim 19, further comprising at least one positively charged amino acid at the amino terminus, carboxy terminus, or both.

21. The diastereomeric peptide according to any one of claims 19 and 20 selected from the group consisting of SEQ ID NO:22 and SEQ ID NO:23.

22. A pharmaceutical composition comprising as an active ingredient a membrane binding diastereomeric peptide comprising from about 7 to 50 amino acid residues corresponding to a fragment of a transmembrane protein, wherein at least two amino acid residues of the diastereomeric peptide are in the D-isomer configuration, said diastereomeric peptide capable of binding the transmembrane protein thereby inhibiting functional assembly of said transmembrane protein, and active fragments, derivatives, analogs or salts thereof, and a pharmaceutically acceptable carrier.

23. The pharmaceutical composition according to claim 22, wherein the diastereomeric peptide comprises from 10 to 40 amino acid residues.

24. The pharmaceutical composition according to claim 21, wherein the membrane protein is selected from the group consisting of viral proteins, bacterial proteins, ion channels, receptors, transporters, and pumps.

25. The pharmaceutical composition according to claim 24, wherein the viral protein is a viral envelope surface glycoprotein.

26. The pharmaceutical composition according to claim 25, wherein the viral envelope surface glycoprotein is selected from the group consisting of envelope surface glycoproteins of HIV, human T-lymphocyte virus, human respiratory syncytial virus, human parainfluenza virus, influenza virus, measles virus, Epstein-Barr virus, bovine leucosis virus, feline sarcoma virus, feline leukemia virus, simian sarcoma virus, simian leukemia virus, simian immunodeficiency virus, canine distemper virus, Newcastle disease virus, simian Mason-Pfizer virus, and sheep progressive pneumonia virus.

27. The pharmaceutical composition according to claim 26, wherein the viral envelope surface glycoprotein is HIV-1_{LAV1} gp41.

28. The pharmaceutical composition according to claim 27, wherein the diastereomeric peptide comprises the amino acid sequence of DP178 set forth in SEQ ID NO:1.

29. The pharmaceutical composition according to claim 28, wherein the diastereomeric peptide is selected from the group consisting of SEQ ID NO:2 and SEQ ID NO:3.

30. The pharmaceutical composition according to claim 28, wherein the diastereomeric peptide further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

31. The pharmaceutical composition according to claim 27, wherein the diastereomeric peptide comprises the amino acid sequence set forth in SEQ ID NO:4 corresponding to HIV-1_{LAV1} gp41 amino terminal fusion peptide.

32. The pharmaceutical composition according to claim 31, wherein the diastereomeric peptide selected from the group consisting of SEQ ID NO:5 to SEQ ID NO:7.

33. The pharmaceutical composition according to claim 31, wherein the diastereomeric peptide further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

34. The pharmaceutical composition according to claim 22, wherein the membrane protein is Glycophorin A.

35. The pharmaceutical composition according to claim 34, wherein the diastereomeric peptide comprises the amino acid sequence set forth in SEQ ID NO:8.

36. The pharmaceutical composition according to claim 35, wherein the diastereomeric peptide further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

37. The pharmaceutical composition according to claim 36, wherein the diastereomeric peptide selected from the group consisting of SEQ ID NO:9 and SEQ ID NO:10.

38. The pharmaceutical composition according to any one of claims 35 to 37, wherein the diastereomeric peptide selected from the group consisting of SEQ ID NO:11 to SEQ ID NO:19.

39. The pharmaceutical composition according to claim 24, wherein the bacterial protein is asparate Tar receptor.

40. The pharmaceutical composition according to claim 39, wherein the diastereomeric peptide comprises the amino acid sequence set forth in SEQ ID NO:20 corresponding to the transmembrane domain-1 of the aspartate Tar receptor.

41. The pharmaceutical composition according to claim 40, wherein the diastereomeric peptide further comprising at least one positively charged amino acid residue at the amino terminus, carboxy terminus, or both.

42. The pharmaceutical composition according to any one of claims 40 and 41, wherein the diastereomeric peptide selected from the group consisting of SEQ ID NO:22 and SEQ ID NO:23.

43. A method for inhibiting membrane protein assembly in a cell comprising contacting the cell with an effective amount of a membrane binding diastereomeric peptide according to any one of claims 1 to 21, thereby inhibiting the membrane protein assembly.

44. A method for inhibiting infection by a virus to a cell comprising contacting the cell with an effective amount of a membrane binding diastereomeric peptide according to any one of claims 1 to 21, thereby inhibiting the infection of the cell.

45. The method according to claim 44, wherein the virus is selected from HIV, human T-lymphocyte virus, human respiratory syncytial virus, human parainfluenza virus, influenza virus, measles virus, Epstein-Barr virus, bovine leucosis virus, feline sarcoma virus, feline leukemia virus, simian sarcoma virus, simian leukemia virus, simian immunodeficiency virus, canine distemper virus, Newcastle disease virus, simian Mason-Pfizer virus, and sheep progressive pneumonia virus.

46. A method for inhibiting chemotaxis of a bacterial cell to a nutrient comprising contacting the cell with an effective amount of a membrane binding diastereomeric peptide according to any one of claims 1 to 21, thereby inhibiting the chemotaxis of the bacterial cell to the nutrient.

47. A method for inhibiting virus replication or transmission in a subject comprising administering to the subject in need thereof a therapeutically effective amount of a pharmaceutical composition according to any one of claims 22 to 42, thereby inhibiting the virus replication or transmission.

48. The method according to claim 47, wherein the subject is a human.

49. The method according to claim 48, wherein the virus is a human virus selected from the group consisting of HIV, human T-lymphocyte virus, human respiratory syncytial virus, human parainfluenza virus, influenza virus, measles virus, Epstein-Barr virus, and Hepatitis B virus.

50. The method according to claim 47, wherein the subject is an animal.

51. The method according to claim 50, wherein the virus is selected from the group consisting of bovine leucosis virus, feline sarcoma virus, feline leukemia virus, simian sarcoma virus, simian leukemia virus, simian immunodeficiency virus, canine distemper virus, Newcastle disease virus, simian Mason-Pfizer virus, and sheep progressive pneumonia virus.